Application of the Visual Chart in an Ambulatory OB-GYN Clinic

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The Visual Chart is a model for computer-based patient records based on graphical methods of data and information entry and representation.[1,2] We have previously developed modules for application of the Visual Chart in an inpatient medicine service environment. These modules present medical information in two views: a two-dimensional grid, in which icons represent medical events and a problem-oriented view. In the grid view, the icons are displayed horizontally along a time line, and separated by type along the vertical axis. In the problem-oriented view, events are shown in an icon based list and grouped by their association with an identified medical problem (e.g. diagnoses, treats, or contains reference material about the problem). Successive levels of detail concerning the event are revealed by moving the mouse over and double-clicking an icon. Moving the mouse over an icon displays identifying information about the event and double clicking displays all of the data concerning the event using context-appropriate viewers.

As the majority of patient care is provided in outpatient settings, computer-based patient record systems that help to link inpatient and outpatient information sources are vital. We have described a "lifetime view" for the Visual Chart which would integrate both inpatient and outpatient experiences into a complete health care record for an individual.[2] Outpatient obstetrics and gynecology care comprises a major component of the lifetime medical record for female patients. We have therefore attempted to adapt the principles used in the Visual Chart to such a setting, using the Women's Clinic at the Children's Hospital of Buffalo as a test site.

The clinic provides a unique environment in which to test the Visual Chart. As a primary care outpatient clinic associated with a tertiary care inpatient facility, it is a model of medical practice that is gaining in importance. Its two primary patient interactions, the prenatal visit and the gynecology primary care visit, have been well studied, and locally and nationally standardized charting forms are available, which can be adapted easily to a computer-based system.

Two views of the data were created for the prenatal record, analogous to the previously described time-line and problem-oriented views for inpatient records. In the prenatal time-line view, events spread along the horizontal axis represent single prenatal visits, and events of like type are again grouped along the vertical axis. In this application, some of the event representations themselves contain all of the data associated with the event, i.e., single data elements such as fundal height or fetal heart rate; others are icons which must be double clicked to display all of the event data, such as laboratory values, progress notes, or ultrasound images. Problems contained within the prenatal record might include "previous pre-term labor" or "at risk for gestational diabetes," and may evolve throughout the pregnancy. Events which concern those problems, such as glucose measurements for gestational diabetes, can be linked to the problem as in the inpatient version.

References

1. Litt, H. and J. Loonsk. "Digital Patient Records and the Medical Desktop: An Integrated Physician Workstation for Medical Informatics Training." SCAMC 1992, pp. 555-559.

2. Litt, H. and J. Loonsk "Graphical Representation of Medical Information in The Visual Chart." IEEE-CBMS 1994, pp. 252-257.

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